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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,169	11/26/2003	Daniel Mulligan	SIG000114	5741
34399	7590	08/23/2005	EXAMINER	
GARLICK HARRISON & MARKISON LLP			CHANG, DANIEL D	
P.O. BOX 160727			ART UNIT	
AUSTIN, TX 78716-0727			PAPER NUMBER	

2819

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/723,169

Applicant(s)

MULLIGAN ET AL.

Examiner

Daniel D. Chang

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Qm

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Objections

Claim 19 is objected to because of the following informalities: essential structural cooperative relationships of elements are omitted, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are the connections between the programmable driver and the previously cited elements, i.e. interface modules, converter, processing module, and memory. Therefore, it is recommended that the recitation, “a signal” on line 14 be changed to --the analog signals--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-12 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by McMahan et al. (US 5,859,541, hereinafter McMahan).

McMahan discloses, in Figs. 3 and 4, a programmable driver (40, 50) comprises a first driver (42, 60), a second driver (44, 61), a third driver (46, 65), and controller (52). As for the recitation, “a state machine” in claim 10, McMahan teaches that the control input may be generated from any one of numerous sources (col. 5, lines 10+).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over McMahan in view of Pruett et al (US 6,490,121, "Pruett" hereinafter).

As applied previously, McMahan teaches all the features of the claimed invention, with the exception of teaching the claimed multiple function system on a chip integrated circuit comprises a plurality of interface modules, a converter, a processing module, and on-chip memory with their interconnections as claimed.

Pruett discloses a plurality of interface modules (176), a converter (190), a processing module (172), and on-chip memory (174) with their interconnections as claimed.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to have provided the driver of McMahan in the circuit 100 of Pruett in order to provide a programmable driver.

Response to Arguments

Applicant's arguments filed June 15, 2005 have been fully considered but they are not persuasive.

Applicant argues on page 15 of the Amendment filed June 15, 2005, that "McMahan does not disclose suggest or teach placing a second driver in a high-impedance state" (re. claim 1); on page 16, "McMahan does not disclose tri-state drivers" (re. claim 7); on page 16, "McMahan

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does not disclose suggest or teach a configuration where the drive level is controlled in a first and second state between first and second drive levels.” (re. claim 13); and on page 17, “McMahan’s output buffers do not have a “high-impedance state” (re. claim 19). However, McMahan discloses in col. 4, lines 27+ that “Each of buffers 42, 44, and 46 also has a control input for respectively receiving control signal C0, C1 and Cn. In operation, output buffer section 40 functions to provide a collective output buffer at the output pin wherein the collective output buffer has an output impedance which is selectable in response to control signals C0, C1, and Cn. By choosing differing values of Z1, Z2.... Zn, the output impedance at the output pin may be significantly varied.” McMahan further discloses in col. 6, lines 14+, “Although the control signals, C0, C1, ... Cn, are illustrated as distinct signals, a single control signal may be used where C0, C1, etc, represent one or more bits of the single control signal.” Therefore, when one or more control signal(s) C0, C1, and Cn are enabled or disabled, output impedances will vary with the data 0 or 1 present at the output; and when all control signals are disabled, the output will be in high impedance state. Therefore, the output will be in tristate (0, 1, and high impedance). Therefore, the previous rejection is maintained.

Conclusion

THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

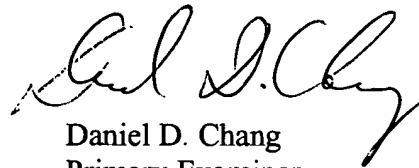
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel D. Chang whose telephone number is (571) 272-1801. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael J. Tokar can be reached on (571) 272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel D. Chang
Primary Examiner
Art Unit 2819

**DANIEL CHANG
PRIMARY EXAMINER**